

Claims

1. Method for preparing a mineral melt for the production of mineral fibres, in particular rock wool for the production of insulating materials for thermal, acoustical and fire protection, of stock culture substrates, reinforcement fibres and fibres for filtering purposes, in which method at least industrial residual materials as well as correction materials for regulating the required composition and viscosity of the melt are reduced in size and compacted together with a bonding agent to form moulded pieces and are supplied to a melting unit,
c h a r a c t e r i z e d i n
that the components of the moulded pieces, particularly the correction materials and/or other components of the mechanical mixture are at least partially substituted by granular combustion residues, in particular ashes or slags from the combustion preferably of lignite and/or coal dusts, paper sludge or wood chips.
2. Method according to claim 1,
c h a r a c t e r i z e d i n
that said residual materials consist of solidified melts, separated spherical or spiky glass particles and/or defective or recycled products, filter dusts from the manufacturing process, mechanical mixture residues and parts of a fire-resistant furnace lining.
3. Method according to claim 1,
c h a r a c t e r i z e d i n
that said residual materials are reduced in size and mixed with the correction materials as well as the bonding agent.

4. Method according to claim 1,
c h a r a c t e r i z e d i n
that said moulded pieces are fed to the melting unit together with extru-
sive rocks like for example basalt and/or diabase and/or furnace slags.
5. Method according to claim 1,
c h a r a c t e r i z e d i n
that said combustion residues are produced by a fluidized-bed combus-
tion.
6. Method according to claim 1,
c h a r a c t e r i z e d i n
that said combustion residues are fine or extra fine-grained, in particular
with a grain size ≤ 0.05 mm.
7. Method according to claim 1,
c h a r a c t e r i z e d i n
that said combustion residues have the following composition:

SiO ₂	12 to 46 % by weight
Al ₂ O ₃	8 to 20 % by weight
TiO ₂	0.2 to 2 % by weight
Fe ₂ O ₃	1 to 11 % by weight
MgO	1 to 10 % by weight
CaO	8 to 31 % by weight
K ₂ O	1 to 3 % by weight
Na ₂ O	0.2 to 1.5 % by weight
SO ₃	2 to 15% by weight
others	< 2 % by weight

8. Method according to claim 1,
c h a r a c t e r i z e d i n
that said moulded pieces contain inorganic bonding agents, in particular
cement moieties of 9 to 15 % by weight.
9. Method according to claim 1,
c h a r a c t e r i z e d i n
that said correction materials are substituted by combustion residues to
an extent of 2 to 25 % by weight, in particular to an extent of 2 to 5 % by
weight.
10. Method according to claim 1,
c h a r a c t e r i z e d i n
that said correction materials consist of granular ores, for example
haematite or magnetite and/or residual materials from the power plant
and/or metal producing and working industries and are contained to an
extent of 20 to 50 % by weight in said moulded pieces.
11. Method according to claim 1,
c h a r a c t e r i z e d i n
that said correction materials have a grain size of 0 to 20 mm, in particu-
lar 3 to 7 mm.
12. Method according to claim 1,
c h a r a c t e r i z e d i n
that said correction materials include alkaline earth materials for viscosity
reduction and/or Al_2O_3 for increasing the biosolubility.

13. Method according to claim 1,
c h a r a c t e r i z e d i n
that said combustion residues contain components from from a flue gas
desulphurization.